

The Effects of Metaphorical Frames on Attitudes: the Euro Crisis as War or Disease?

Since 2009, the Euro crisis has hugely affected the global economy and presented an important challenge for the Euro, and the structures and powers of the EU (De Grauwe, 2010; Picard, 2015). The root of the crisis was a group of interconnected crises, involving various European and national economic and political factors related to fiscal and monetary policies. The weak banking systems, the sovereign debt problems in various countries, the lack of government trust, and the unstable construction of the Eurozone have led to the onset of the Euro crisis (Authers, 2012; van den Noord & Szekely, 2011). At the time of writing (i.e. the end of 2015) the Euro was still in crisis.

Normally, economic news does not get extensive coverage in comparison to news related to domestic and foreign policy, societal issues, and human interest stories (Kollmeyer, 2004). However, news coverage of the economy is important for at least three reasons. Firstly, the news coverage may affect the public agenda. Secondly, it may influence the expectations regarding the future development of the national economic situation (Boomgaarden, van Spanje, Vliegenthart & de Vreese, 2011), and the public attitudes towards policies, especially with respect to the economy (Carroll & McCombs, 2003). For example, negative news about the economy affects the economic evaluations of citizens (de Vreese, 2010). Thirdly, the economic news coverage may also affect citizens' behaviour in the different sectors of the economy, such as consumer behaviour and financial activities (Kollmeyer, 2004), voting behaviour (e.g., Duch, 2007), or support for European integration (e.g., de Vreese & Boomgaarden, 2005).

Since the 2007 credit crisis in the US, there has been a growing interest in the media research field with respect to the role of the media in the global crisis, given that news media play a role in covering and commenting on social, economic, and political crises (Cottle, 2009; Chakravartty & Downing, 2010). After all, news media are key actors in a democracy and as such buffers in the articulation of issues of common concern in the European public sphere (Papathanassopoulos & Negrine, 2011). Through their coverage, the media tend to control this European public sphere (Zografova, Bakalova

& Mizova, 2012), while playing a significant role in agenda setting and creating images of society (Schudson, 2008; Aalberg & Curran, 2012). Moreover, the news media also provide frames enabling citizens how to understand actual policy themes (Brewer & Gross, 2010).

Typically, in crisis situations, people start looking for information about causes and effects more than they usually do (Coombs & Holladay, 2004). According to Tzogopoulos (2013), coverage of international affairs, such as the Euro crisis, varies over time. In tranquil times relatively little attention is paid to foreign news as national audiences mostly follow domestic issues. In more turbulent times, international affairs become more pressing and are more often noted in the news coverage. For a majority of citizens the media are the main source of information on the Euro crisis (Ortner, 2014). Not only do the media select the topics they report on, they also define the way they cover them when it comes to angle, intensity, tone, etc. Through the information made available and the way it is accessed (Scheufele & Tewksbury, 2007), the media shape the perception of events of many millions of Europeans. The news coverage of the Euro crisis has created highly mediated portrayals of the Euro and the EU (Picard, 2015), which might have substantial implications for the European identity and further cooperation within Europe. Therefore, research into these mechanisms is needed since coverage of the current financial crisis may have a tangible effect on public opinion.

Frames and metaphors

The news framing approach is central to our study. Frames are schemes of interpretation that may be used to organize information and to manage it efficiently (Lecheler & de Vreese, 2012). As defined by Entman (1993, p. 52) to frame is to *“select some aspects of a perceived reality and make them more salient in a communicating context, in such a way to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation”*. Thus, frames are certainly not neutral (Berinsky & Kinder, 2006). By promoting some aspects of an issue, a frame implies what could be done.

Earlier studies analyzed the probability of framing effects (e.g., Boomgaarden et al., 2011). A frame might cause significant changes in attitudes when participants are exposed to them separately in different experimental conditions (Chong & Druckman, 2007). Although the media are the main source of information for the majority of the Europeans (Ortner, 2014), the news coverage of the crisis evidently does not affect all citizens equally. To understand how frames can change attitudes, Slothuus (2008) proposed a “*dual process model*” of framing effects that combines belief importance change and belief content change. With regard to the belief importance change, framing effects are mediated by three stages: *availability*, *accessibility*, and *applicability* (Chong & Druckman, 2007). First, individuals need to comprehend the meaning and the significance of the considerations. Then, these considerations need to be stored in the individual’s mind in order to be *available* for retrieval and to be ready for use (e.g., Higgins, 1996). Accessibility effects refer to the likelihood that an available consideration stored in one’s memory is activated when forming an evaluation (Nabi, 2003). The accessibility of a consideration may be higher when audiences pay substantial attention to the news story (Scheufele & Tewksbury, 2007), and a consideration may be ignored if other accessible considerations are more salient in their memory (Shen & Edwards, 2005). Furthermore, the impact of a consideration can also depend on its applicability (Chong & Druckman, 2007). The likelihood that a frame will be judged applicable and structure the attitude of the individual increases with conscious perceptions of its strength or relevance. The amount of conscious deliberation behind assessments of appropriateness will vary depending on the context and motivation (Druckman, 2004).

Complementary, further research revealed that framing also functions by bringing new views to an individual’s belief content (Slothuus, 2008). Instead of changing the importance of an existing consideration, a frame may put forward new perspectives. This new consideration might change an individual’s opinion and might be a reason to support an issue or not (Zaller, 1992). The individual’s belief content change may occur by adding new considerations as well as by changing already existing considerations (Lecheler & de Vreese, 2012). In addition, Lecheler and de Vreese (2012) demonstrated that the belief content change is more prominent than the belief importance change.

Igartua and Cheng (2009) presented another relevant study on how news frames affects individuals. They explained framing effects as the result of peripheral route processing, which is based on the well-known Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986). According to ELM there are two different routes responsible for the change in attitudes. The central route processing means that the receiver of the message tries to make a critical and exhaustive evaluation of it. This process is controlled, conscious and focused on the adaption of its arguments. In contrast, peripheral route processing is rather superficial, automatic, and based on peripheral cues (e.g., source credibility, tone of coverage). ELM suggests that it is more difficult to influence a person who is motivated and has the ability to process messages. However, news reception is often presided by a low level of capability and/or motivation. Therefore, Igartua and Cheng concluded that peripheral route processing is what usually occurs.

Framing effects do not operate uniformly across individuals. Next to the different explanatory processes responsible for the framing effects, the potential effects may also be moderated by individual-level factors such as political knowledge (e.g., Lecheler & de Vreese, 2011), motivation (e.g., Petty & Cacioppo, 1986), or values (e.g., Waheed, Schuck, Neijens & de Vreese, 2015), as well as contextual moderators such as source characteristics (e.g., Druckman, 2001), or issue characteristics (e.g., Iyengar, 1991). Furthermore, the degree to which people rely on the media for understanding and interpreting events and surroundings affects the perceptions of the news (Morton & Duck, 2001): the higher the media dependency, the higher the magnitude of the media effect. In our study, the individual-level factors 'knowledge and awareness of the Euro crisis' and 'level of education' will be used as covariates.

Metaphorical framing effects

In our study, we will measure the effects of metaphorical frames. Gamson and Modigliani (1989) labeled metaphors as an important kind of framing device (besides exemplars, catch phrases, and word choices). Metaphors often offer a rather clear mental image that suggests what is most relevant and important about a news event. Furthermore, metaphors are omnipresent in our everyday discourse, and they convey implications, allowing people to perceive the world in a specific way by referring to familiar images (Thibodeau & Boroditsky, 2011). For instance, Lakoff and Johnson (1980) indicated that exposure to the war metaphor can generate a network of consistent inferences. The structure of an argument – with a vocabulary such as ‘enemy’, ‘threat to security’, ‘attack’, ‘defense’, etc. – reflects this, which may affect how people attempt to cope with social problems and how they collect considerations to make well-informed decisions.

According to the Metaphorical Framing Model of Ottati, Renstrom and Price (2014), the effect of metaphors contains two phases: activation and application. In the first phase, the metaphor is activated if the association with the specific issue or event, in this case the Euro crisis, is triggered. In the second phase, the metaphor may activate a cognitive structure that affects the individual’s impression, opinion or attitude of the target topic or event being described in the communication. Furthermore, the impact of metaphorical framing is predominantly covert (Thibodeau & Boroditsky, 2011), since individuals hardly ever recognize metaphors as an influential element in decision-making. This corresponds with peripheral route processing of Igartua and Cheng (2009) as described above. Generally, previous research found that metaphorical frames might influence individuals’ opinions and attitudes (e.g., Robins & Mayer, 2000; Thibodeau & Boroditsky, 2011). We presume that the influence of the metaphorical frames will be similar in case of an event such as the Euro crisis. Therefore, the research question reads as:

RQ: Do metaphorical frames of the Euro crisis affect individuals’ attitudes in accordance with the reasoning as reflected in the metaphorical image?

Earlier studies on the news framing of the Euro crisis

In the early stages of the Greek financial crisis, Touri and Rogers (2013) found that the coverage of the Euro crisis was dominated by the responsibility frame. This frame presents a situation or a problem in terms of identifying those who are responsible for the crisis and/or for the solutions to manage the crisis. The British press identified the financial crisis predominantly as a problem for Greece and the other Eurozone countries, which were held accountable. Next to the responsibility frame, the consequence frame was identified as a dominant news frame with an emphasis on the potential collapse of the Eurozone and the recession in South European countries. The high frequency of the economic consequences frame was obvious, given the economic character of the Euro crisis. Research of Romanian online news media also showed the frequent use of these two news frames (Radu & Stefanita, 2012).

Some researchers studied the metaphorical frames of the recent economic crises. Bounegru and Forceville (2011) analyzed the visual metaphors of the global financial crisis in cartoons published in 2008. They identified four metaphors as most prominent: catastrophe/(natural) disaster, illness/death, and begging. Horner (2011) studied the metaphors used in public discourse of the US banking crisis in 2008. The most dominant metaphors in his research were illness, natural disaster, and mechanical failures. Esager (2011) analyzed the metaphors of the global financial crisis in English and Danish newspapers and found that movement, liquid, living being, medical treatment, war and sports, machine, building, journey, object, and a natural phenomenon were the most prevalent metaphors. Most of these metaphors were also found in European newspapers during the Euro crisis (Authors, 2015). This cross-national frame analysis in ten EU member states identified five dominant metaphorical frames: war, disease, construction, natural disaster, and game and sports. In a deductive study in the Low Countries using these five metaphorical frames, the war and disease frames proved to be the two most dominant frames in the news coverage (Authors, 2014).

Both frames are predominantly negative, but differ in scope and implications. The war frame characterizes a battle or clash between different actors. The journalists often highlight conflicts between European leaders, referring to war, fights and weapons. Furthermore, the clash of interests between financial markets, rating agencies and the political world are very often discussed. A clash of interests may increase the rivalry and violence between the actors. Possible solutions within this frame are counterattacks to defend a position, on the one hand, or peace and compromise on the other. The metaphorical war frame implies that the European leaders and/or the financial markets are the ones to blame for causing the crisis, or for not effectively solving it. If the Euro crisis is seen as a 'war', then penalties and sanctions for the weaker actors such as Greece form apparently the solution (e.g., Grexit). The war frame is habitually used to dramatize the crisis, and to create a scenario of chaos and uncertainty, as a war would lead to much financial and human damage. Journalists probably use the war frame because it is related to conflict, which is an important news criterion to attract readers (Galtung & Ruge, 1965). Furthermore, conflict is also useful to meet professional standards of balanced journalism (Nieminen & Trappel, 2011). The disease frame, on the other hand, is constructed around the idea that the crisis is caused by an illness of a country or a financial institution. Picturing the Euro crisis as a disease implies that the crisis is beyond anyone's responsibility. If the disease frame is triggered, the individual may be afraid that anyone may suddenly come down with a disease. A crisis is an emergency situation in which a system or mechanism is seriously disturbed so that a remedy is required. This remedy will determine the future: either the disease will be cured, or complete chaos and even death will follow. To cure the illness (e.g., a virus, an infection or stress) and to prevent possible contagion of other persons or countries, medicine, surgery (an amputation is fairly drastic) or a proper therapy is recommended (Authors., 2015).

The frames under study go beyond what is often done in studies on framing effects, that is using a one-sided design with two or more contrasting experimental conditions (Chong & Druckman, 2007; Igartua & Cheng, 2009): positive versus negative, black versus white. Most of these studies have found that opposing frames have significant impact when compared to one another. In our research, the

two metaphorical frames (war and disease) are not absolutely opposing frames. This more subtle approach wants to do justice to the nuances of a complex reality. Overall, we expect that the participants will more often express their opinions about the crisis with a reference to the metaphors activated in their experimental condition.

H1: Metaphorical frames will sway people's opinions in the direction of the frame.

Furthermore, we expect that the effect of metaphorical frames will depend on the magnitude and strength of the metaphors. A frame is defined as strong if the frame elements in the article (together and separately) clearly refer to the underlying metaphorical frame (i.e. war or disease). Weak frames are seen as more subtle, since the link between target and base is weaker. For example, readers would more easily think about a disease if they are confronted with metaphors such as contagion, infection or a virus (strong disease frame) than if they read words as health, immunity or stress (weak disease frame). We assume that strong frames will exert a strong effect on individual attitudes.

H2: Strong metaphorical frames will exert more effect than weak frames.

As already mentioned, previous research proved that the magnitude of the framing effects depends on individual-level moderator variables as well as contextual moderators. In our study, we will only focus on the individual-level moderators 'knowledge and awareness of the Euro crisis' and 'level of education'. According to Slothuus (2008) the functioning of the mediators belief importance change and belief content change differs depending on the political awareness of the individuals. In his study, the most politically aware were only affected through belief importance change, whereas the moderately politically aware individuals were influenced by both belief importance change and belief content change. The least politically aware were only marginally framed. Besides, Robins and Mayer (2000) revealed that, if the participant had access to existing relevant knowledge structures, the metaphorical framing effect was weakened. If the individual has little prior knowledge of a news event, direct application of the metaphor is most likely (Ottati et al., 2014). In contrast, individuals with strong opinions will draw upon chronically accessible alternative considerations that take precedence over

the temporarily accessible considerations (e.g., Brewer, 2001). Lecheler, de Vreese and Slothuus (2009) also found that issue importance works as a moderator of framing effects. High-important issues had no effects. However, low-importance topics yielded large effects, since these individuals do not possess sufficient information on the issue to defend their opinion. Furthermore, frequent exposure to a specific frame increases the accessibility and availability of the underlying considerations (Chong & Druckman, 2007). Finally, ELM suggests that it is more difficult to influence individuals who are motivated or have the ability to process messages (Petty & Cacioppo, 1986). So, we expect that the metaphorical frames under study will less affect individuals with more knowledge and awareness of the Euro crisis than the ones with less knowledge or awareness. Along the same lines, we assume comparable effects for the level of education, due to the ability to process messages: higher educated people will be less susceptible to the metaphorical frames.

H3: Metaphorical frames will less affect Individuals with more knowledge and awareness of the Euro crisis than the ones with less knowledge and awareness.

H4: Higher educated individuals are less susceptible to the metaphorical frames than those who are lower educated.

Method

Design

Previous studies have applied a variety of methods to test the effects of framing on opinion and attitude (Brewer & Gross, 2010), such as laboratory experiments (e.g., Nelson, Clawson & Oxley, 1997), field experiments (e.g., Cappella & Jamieson, 1997), survey experiments (e.g., Waheed et al., 2015), or qualitative methods like in-depth interviews, focus groups, or participant observation (e.g., Walsh, 2004).

We conducted a 2 (metaphoric frame: war and disease) x 2 (strength of frame: strong and weak) post-test only between-subjects survey experiment. The experimental manipulations provided a tool for stimulating exposure to framing by randomly assigning participants to receive one form of the questionnaire or another (Brewer & Gross, 2010). Besides the four framing conditions, a control group was included where participants were exposed to the news article without frame elements. The control group provided a reference point against which to judge the influence of the four frame conditions. Consequently, the design resulted in five experimental conditions.

Participants

Our research entailed two experimental studies with an eye on generalizing of the findings: a student sample versus a nonstudent sample. The student sample was applied for convenience reasons. However, Cappella and Jamieson (1997) noted that students differ in education, ideology, political knowledge and experience, and age from the overall population. Moreover, Brewer and Gross (2010) assumed that certain topics and frames might interact with the characteristics of a student sample. If the students are atypical in terms of characteristics relevant for the issue under study, then the use of this student sample might distort the results of the metaphorical framing experiment. Therefore, an additional nonstudent sample was used to generalize the results to the broader public.

Student sample. The data collection occurred between 17 April and 26 May 2015 and the total sample consisted of 259 students. The sample contained more women ($n = 141$; 54.4%) than men ($n = 118$; 45.6%). The students were randomly assigned to one of the five experimental conditions: control condition ($n = 53$), conditions 'war-strong framing' ($n = 50$), 'war-weak framing' ($n = 50$), 'disease-strong framing' ($n = 56$) and 'disease-weak framing' ($n = 50$).

Nonstudent sample. The data collection occurred between 3 and 21 July 2015. In total, the nonstudent experiment included 507 Flemish participants, carefully recruited by iVOX, a Belgian research company (www.ivox.be), controlling for different attributes of the members of the sample, and representing the larger adult population: 254 women (50,1%) and 253 men (49.9%); aged between 21

and 39 years (32,9%), between 40 and 59 years (40,0%), and between 60 and 79 (27,1%). These participants were randomly assigned to one of the five frames: control condition (n = 100), conditions 'war-strong framing' (n = 97), 'war-weak framing' (n = 104), 'disease-strong framing' (n = 103), and 'disease-weak framing' (n = 103). The sample size of all experimental conditions maintained the statistical power to find evidence of the effect of framing.

Stimulus material and manipulation

The participants of both samples received an e-mail with a link to the online survey. First, all participants had to answer six questions to measure their knowledge and interest in news about the Euro crisis, using five-point Likert scales, going from "strongly disagree" to "strongly agree": (1) My knowledge about economy is good; (2) I am interested in news about the Euro crisis; (3) I am aware of recent events concerning the Euro crisis; (4) I know how the Euro crisis has arisen; (5) I follow the news coverage about the Euro crisis; and (6) I follow the news coverage about the Euro crisis with attention. After completing these six questions, participants were randomly assigned to one of the five conditions and asked to read through a news article dealing with the Euro crisis. The basis of the article was identical, except for the metaphorical frames in the framing conditions. The sentences and frame elements in the article are effectively used in the news coverage about the Euro crisis, based on previous content analyses about the framing of the Euro crisis (Authors, 2014; 2015). In this way, the news story gave the impression of a realistic news article. The metaphorical frame elements per condition are listed in table 1.

Table 1: Metaphorical frame elements per condition

Condition	Metaphorical frame elements
Control	No frame elements added
War – Strong	Frontal attack, (gun) sight, forearm, under fire, hit and strike, knife at the throat, ammunition, financial war, conflict, fight, D-Day
War – Weak	In headlock, battle, hold on, losing ground, limited freedom, financial battle
Disease – Strong	Risk of contagion, severe illness, infection, financial infusion, making healthy, debt virus, immunity, less breathing space, financial epidemic, diagnosis, therapy
Disease – Weak	Nervousness, financial health, financial stress, less breathing space, nervy, immune, get healthy, excessive stress situation, diagnosis, therapy

To measure the degree of attention while reading the article, the participants had to answer six questions about the news article. The effect measurement of the metaphorical frames consisted of four components: root of the crisis and solutions for the crisis, vision towards the future of the Euro, and attitude towards the Euro and the EU. In the next paragraphs, we will present these components.

Root of the crisis and solution for the crisis. Two open questions were presented to the participants: (1) In your opinion, what was the major root of the Euro crisis?; (2) In your opinion, what would be the most appropriate solution for the Euro crisis?. The answers on these open questions were analyzed in search of the presence (yes/no) of the dominant frames of the Euro crisis (Authors, 2015). Training led to high intercoder reliability scores (Krippendorff's Alpha) based on a sample of 10% of the answers of the nonstudent sample ($n = 51$): war ($\alpha = .85$) and disease ($\alpha = .90$).

Vision towards the future of the Euro. In all five conditions, the news article ended with the presentation of two opposing visions towards the future of the Euro: deeper integration of the

Eurozone or breaking up the Eurozone altogether. In the online survey, the participants were asked to point out / select their personal preference of these two visions.

Attitude towards the Euro and EU. Furthermore, the effects of framing on the attitude towards the Euro were measured. Along the same lines as de Vreese (2010), this study made use of five questions with seven-point Likert scales, ranging from “strongly disagree” to “strongly agree”. The questions of de Vreese (2010) measured the support for the enlargement of the EU. Thus, the sentences in our survey were revised in order to measure support for the Euro: (1) The Euro is a good thing; (2) The Euro is important for the future of the EU; (3) Belgium will have more advantages than disadvantages from the Euro; (4) The Euro will affect the Belgian economy negatively; (5) The long-term gains of the Euro outweigh the short-term costs. Another seven-point scale was used to measure the attitude towards the EU, ranging from “strongly disagree” to “strongly agree”.

Results

Student sample

Before looking into the results of the experimental frame analysis, some characteristics of the participants will be presented. More than half of the students (54.4%) considered their knowledge about the crisis as average. Another large group (35.5%) indicated to have a high knowledge about the Euro crisis. A smaller group (10.0%) declared to have little or no knowledge about it. Male students significantly more often indicated to have more knowledge about the crisis than their female peers, $t(231,879) = 8.140; p < .001$.

Most students were (rather) positive towards the EU and the Euro. Male students ($Mean = 5.7$) had a more positive attitude towards the Euro than female students ($Mean = 5.1$), $t(252,845) = 6.116; p < .001$. However, no significant difference in attitude towards the EU was found regarding gender, $t(256,989) = .815; p = .416$. Furthermore, students with a higher self-perceived knowledge of the Euro crisis were more positive towards the Euro, $F(2,256) = 20.754; p < .001$. They also had a more positive

attitude towards the EU than participants with a lower self-perceived knowledge, $F(2,256) = 4.599$; $p < .05$.

After reading the article, the participants were asked to answer two open questions about the roots and the solution of the crisis. Most answers were rather short ranging from only a few words to answers of seven or eight sentences. The number of metaphorical frame elements in the answers was rather low ($Mean = 7.7\%$, $SD = .267$), since short texts obviously cannot contain many frame elements (e.g., Author, 2005; Authors, 2014). The use of metaphorical frame elements is illustrated by following answers: *"If it is not going well in some countries, other countries will also be infected"*, *"The banking system is sick"*, and *"It is important that countries work together to make sure the internal conflicts are not too large"*.

Although no significant effects were found between all experimental conditions for the war frame, $F(4,254) = 1.892$; $p = .112$, nor for the disease frame, $F(4,254) = 1.520$; $p = .197$, the comparison of the individual conditions with the control condition showed one significant difference. Students in the 'war-weak condition' ($Mean = 8.0\%$; $SD = .274$) significantly more often used war terminology in their answers than in the control condition ($Mean = 0\%$), $t(49,000) = 2.064$; $p < .05$ (see table 2). No significant differences were found between the 'war-strong condition' ($Mean = 4.0\%$; $SD = .198$) and the control condition, $t(49,000) = 1.428$; $p = .159$. More disease related frame elements were identified in the answers of students in the 'disease-strong' and 'disease-weak' conditions. However, these differences are not significant, respectively $t(101,235) = .772$; $p = .442$ and $t(82,152) = 1.237$; $p = .220$. Consequently, the first hypothesis was only partly confirmed.

Table 2: Percentage of answers with metaphorical frames by condition – student sample

	War		Disease		Control group
	Strong	Weak	Strong	Weak	No frame
War	4.0	8.0*	3.6	0	0
Disease	0	4.0	7.1	10.0	3.8

Note: * = significant difference in comparison with control condition, $p < .05$

The degree of strength of the metaphorical frames seems to be no crucial factor. The students in the ‘war-strong condition’ used the war-related words less than those in the ‘war-weak condition’, thus contradicting our hypothesis 2. Similar results were found for the disease conditions. The participants in the stronger framing condition did not use more terms referring to disease than the weaker variant. Accordingly, the second hypothesis is not confirmed.

Furthermore, the conditions to which the students were assigned did not significantly affect the vision towards the future of the Euro (deeper integration versus breaking up the Eurozone), $X^2(4) = 2.430$; $p = .657$. In each condition, a broad majority was in favor of deeper integration (86.1%), whereas 13.9% of the participants favored a break up the current Eurozone. Furthermore, the attitudes in the student sample did not significantly differ between the conditions, neither for the attitude towards the Euro, $F(4,254) = 1.083$; $p = .365$, nor towards the EU, $F(4,254) = 1.323$; $p = .262$.

Since all participants in this sample are bachelor students, only ‘knowledge and awareness’ (and not education) were used as covariates in the ANCOVA. The results showed that participants with more knowledge and awareness of the crisis did not more often use war related frame elements in their answers on the open questions than the ones with less knowledge and awareness, neither war related frame elements, $F(1,253) = .011$; $p = .535$, nor frame elements referring to disease, $F(1,253) = .017$; $p = .897$. Consequently, the third hypothesis was not confirmed.

Nonstudent sample

The majority of the participants in the nonstudent sample (56,4%) indicated to have a high knowledge about the Euro crisis. Another large group (41.0%) considered their knowledge about the crisis as average. Only a small minority (2.6%) declared to have no knowledge about it. Men significantly more often indicated to have more knowledge about the crisis than women, $t(494,096) = 6.674$; $p < .001$. Furthermore, older people pointed out in the survey that they had more knowledge about the crisis than younger people, $F(2,503) = 16.043$; $p < .001$. However, the level of education had no significant influence on the self-perceived knowledge about the Euro crisis, $F(2,503) = .308$; $p = .735$.

Most participants were (rather) positive towards the EU and the Euro. Men ($Mean = 5.0$ on a 7-point scale) were more positive towards the Euro than women ($Mean = 4.6$), $t(492,929) = 4.016$; $p < .001$. However, no significant difference in attitude towards the EU was found between men and women, $t(503,022) = 1.793$; $p = .074$. A higher education level led significantly more often to a more positive attitude towards the Euro, $F(2,504) = 11.595$; $p < .001$. Furthermore, higher educated participants were also more positive towards the EU, $F(2,504) = 12.663$; $p < .001$. In contrast, age had no significant effect on the attitude towards the Euro, $F(2,504) = .291$; $p = .747$, nor on the attitude towards the EU, $F(2,504) = .841$; $p = .432$. Additionally, participants with a higher self-perceived knowledge of the Euro crisis had a more positive attitude towards the Euro, $F(2,504) = 10.567$; $p < .001$. They were also more positive towards the EU than participants with a lower self-perceived knowledge, $F(2,504) = 5.171$; $p < .05$.

Similar to the student sample, the number of metaphorical frame elements in the answers was rather low ($Mean = 6.7\%$, $SD = .250$). However, the nonstudent sample showed a significant difference between the conditions concerning the answers on the open questions, both for the presence of war related frame elements, $F(4,502) = 4.682$; $p = .001$, and for disease references, $F(4,502) = 2.915$; $p < .05$ (see table 3). The answers on the open questions significantly more often contained frame

elements referring to war in the ‘war-strong’ condition ($Mean = 9.0\%$; $SD = .292$) than in the control condition ($Mean = 0.9\%$; $SD = .100$), $t(117,259) = 2.655$; $p < .05$. In the ‘war-weak’ condition ($Mean = 7.6\%$; $SD = .268$) as well, participants also significantly referred more to war than in the control condition, $t(131,634) = 2.388$; $p < .05$. Furthermore, in the ‘disease-strong’ condition ($Mean = 6.6\%$; $SD = .254$) the participants significantly more used disease related frame elements than in the control condition ($Mean = 1.0\%$; $SD = .100$), $t(131,526) = 2.172$; $p < .05$. In contrast with the war frame, the weaker version of the disease frame ($Mean = 4.9\%$; $SD = .216$) did not result in a significantly higher presence of frame elements referring to disease than in the control condition, $t(144,058) = 1.646$; $p = .102$. Consequently, the first hypothesis was partly confirmed. Similar to the student sample, no differences were found between the strong and weak framing conditions, neither for the war conditions, $t(194,334) = .401$; $p = .689$, nor for disease, $t(197,249) = .610$; $p = .543$. Thus, the second hypothesis was not confirmed.

Table 3: Percentage of answers with metaphorical frames by condition – nonstudent sample

	War		Disease		Control group
	Strong	Weak	Strong	Weak	No frame
War	9.0*	7.6*	0.9	1.0	0.9
Disease	2.0	0	6.6*	4.9	1.0

Note: * = significant difference in comparison with control condition

The conditions to which the participants were assigned had no significant effect on the vision towards the future of the Eurozone, $\chi^2(4) = .999$; $p = .910$. In all conditions, a broad majority was in favor of deeper integration (74.7%). Only a quarter of the participants preferred to break up the current Eurozone. Furthermore, the attitudes towards the Euro and the EU did not significantly differ between the conditions and the control condition, except for the attitude towards the Euro in the ‘disease-strong condition’ (see table 4). Overall, the means of the strong variants are lower than the control condition and the weak framing conditions, although this differences are not significant.

Table 4: Attitude towards Euro and EU by condition on a seven-point scale – nonstudent sample

	Attitude towards Euro		Attitude towards EU	
	Mean	Difference with control condition	Mean	Difference with control condition
Control condition	5.0		4.5	
War – strong	4.7	$t(194,841) = -1.701; p = .091$	4.3	$t(195,576) = -.802; p = .423$
War – weak	4.8	$t(202,813) = -1.298; p = .196$	4.6	$t(200,679) = .332; p = .740$
Disease – strong	4.6*	$t(197,701) = -2.511; p < .05$	4.4	$t(198,751) = -.748; p = .455$
Disease – weak	4.9	$t(201,073) = -.774; p = .440$	4.4	$t(196,510) = -.511; p = .610$

Note: * = significant difference in comparison with control condition

The results of the ANCOVA with ‘knowledge and awareness’ and ‘level of education’ as covariates showed no significant difference in framing effect between participants with more knowledge and awareness of the Euro crisis than the ones with less knowledge and awareness, for both war, $F(1,501) = .617; p = .433$, and disease related frame elements, $F(1,501) = 1.349; p = .246$. Besides, the level of education was also no significant moderator of the framing effect in our study: war, $F(1,501) = .047; p = .829$, and disease, $F(1,501) = 1.267; p = .261$. So, the third and fourth hypotheses were not confirmed by the nonstudent sample.

Conclusion

In two survey experiments (i.e. student sample and nonstudent sample), we analyzed the effects of metaphorical frames in news items on individual’s opinions and attitudes towards the ongoing Euro crisis. The results only partly confirmed our first hypothesis, which predicted that metaphorical frames affect people’s opinions in the direction as suggested by the frame. On the one hand, participants in

the experimental conditions were more likely to adopt the metaphorical frames in their evaluation of the issue than in the control condition. On the other hand, the results do not support a framing effect on the vision towards the future of the Eurozone, nor on the attitude towards the Euro or the EU.

With regard to the answers on the open questions, the participants in the war conditions significantly more often referred to war when answering the open questions. Alternatively, when the Euro crisis was framed as a disease, participants were more likely to use words and sentences containing disease frame elements. So, individuals in the experimental conditions used more metaphorical frame elements in their answers. However, it is not clear whether this was due to the fact that the respondents have taken over the metaphorical frame in their own evaluations of the Euro crisis – and thus that they took over the presented framing – or that the effect was simply a rebound of the wordings used in the stimuli. Although higher occurrence of the metaphorical frames in the answers in the experimental conditions, the differences were not always significant in contrast with the control condition. In the nonstudent sample, three of the four experimental conditions showed a significant difference. Only the condition displaying weak varieties of the disease metaphor showed no significant effect. In the student sample, only one experimental condition turned out to be significantly different.

Furthermore, the results do not confirm our second hypothesis about the strength of the metaphorical frames. Strong metaphorical frames do not exert more effect on people than the weaker version. Although the association with the corresponding frame is more direct and clear in the strong conditions in the nonstudent sample, no significant differences were found in comparison with the weaker versions. This finding may support the thesis that even the presence of a single frame element can activate a complete chain of reasoning (Author, 2010). As a result, even a *subtle* metaphor may trigger the underlying set of cultural values and expectations.

Additionally, our results suggest that the role of ‘knowledge and awareness’ and ‘level of education’ as possible moderators in the framing process is minimal. Consequently, hypotheses 3 and 4 were not

confirmed: the knowledge and awareness of the crisis, nor the level of education played a role of significance in our study.

Discussion

Metaphorical framing effects? Our findings suggest that even an almost unnoticed weak metaphor in a news story as well as in everyday discourse may build complex knowledge structures and may affect opinion and attitudes. These results are in line with previous research about framing effects (e.g., Lecheler & de Vreese, 2012; Nelson et al., 1997; Robins & Mayer, 2000; Thibodeau & Boroditsky, 2011). Although the framing effect in our study is chiefly limited to the take-over of metaphorical frame elements in their evaluations of the Euro crisis, this finding implies that these metaphors and wordings may also be used in future evaluations. Although it is rather naïve to presume that a single news article will directly influence individual's cognitive schemes, the results reveal that the participants frequently adopted the jargon of the frames, and this may generate an effect on the future evaluations of these individuals as well as on the evaluations of others. Additional research is required, as it is not clear whether the effect was due to the fact that the participants have taken over the metaphorical frame in their own evaluations, or that the effect only was a rebound of the terms used in the news story. However, an overall significant effect on attitudes towards the Euro or the EU was not found. Probably, the news about the crisis is only one consideration in the attitude formation towards the Euro and EU.

Duration of framing effects. Our experiment focused on immediate effect measurement, as we did not include duration in our experimental design. Lecheler and de Vreese (2011) analyzed the duration of framing effects and found that the framing effect can persist beyond initial exposure. However, the effect faded over a time period of two weeks. Consequently, it would be interesting to measure the effects of the metaphorical frames under study over a longer time period to ascertain that the established effects may be generalized to real-life framing processes.

Other issues and moderators. We verified the effects of a set of metaphorical frames concerning one specific issue, the Euro crisis. However, previous research indicated that differences in issue importance lead to differences in framing effects (e.g., Lecheler et al., 2009). Future research about metaphorical frames of other news events or topics, such as the current struggle to coordinate the asylum seekers over the European countries, may be interesting to confirm our findings. Furthermore, in our study we only acknowledge two moderator variables (i.e. knowledge and awareness, and level of education). In future research, other moderators such as values (e.g., Waheed et al., 2015) or media dependency (e.g., Morton & Duck, 2001) could be included.

Period of survey. This study was executed more than five years after the start of the Euro crisis. This might have influenced the findings of our study, since framing effects are less likely on established or long-term subjects (Chong & Druckman, 2007). Correspondingly, De Landtsheer (2009) stated that the rise and fall of metaphorical language was strongly related to the development of a crisis. The more frequently metaphorical frames are repeated, the weaker their functionality, as the original meaning of the metaphors tends to dilute.

References

Aalberg, T. & Curran, J. (2012). *How Media Inform Democracy: A Comparative Approach*. London: Routledge.

Authers, J. (2012). *Europe's Financial Crisis: A short guide to how the Euro fell into crisis and the consequences for the world*. London: FT Press.

Author. (2005).

Author. (2010).

Authors. (2014).

Authors. (2015).

Berinsky, A.J. & Kinder, D.R. (2006). Making sense of issues through media frames: understanding the Kosovo crisis. *The Journal of Politics* 68(3), 640-656.

Boomgaarden, H.G., van Spanje, J., Vliegenthart, R. & de Vreese, C.H. (2011). Covering the crisis: Media coverage of the economic crisis and citizen's economic expectations. *Acta Politica* 46(4), 353-379.

Bounegru, L. & Forceville, C. (2011). Metaphors in editorial cartoons representing the global financial crisis. *Visual Communication*, 10 (2): 209-229.

Brewer, P.R. (2001). Value words and lizard brains: Do citizens deliberate about appeals to their core values? *Political Psychology* 22(1), 45-64.

Brewer, P.R. & Gross, K. (2010). Studying the effects of issue framing on public opinion about policy issues. In: P. D'Angelo & J.A. Kuypers (Eds.), *Doing news framing analysis: Empirical and theoretical perspectives* (pp.159-186). New York: Routledge.

Cappella, J.N. & Jamieson, K.H. (1997). *Spiral of cynicism. The press and the public good*. New York: Oxford University Press.

Carroll, C.E. & McCombs, M. (2003). Agenda-setting Effects of Business News on the Public's Images and Opinions about Major Corporations. *Corporate Reputation Review* 6, 36–46.

Chakravartty, P. & Downing, J.D.H. (2010). Media, technology, and the global financial crisis, *International Journal of Communication*, 4: 693–5.

Chong, D. & Druckman, J.N. (2007). A theory of framing and opinion formation in competitive elite environments. *Journal of Communication* 57, 99-118.

Coombs, W.T. & Holladay, S.J. (2004). Reasoned action in crisis communication: An attribution theory-based approach to crisis management. In: D.P. Millar & R.L. Heath (Eds.), *Responding to Crisis Communication Approach to Crisis Communication* (pp.95-115). Hillsdale: Lawrence Erlbaum Associates.

Cottle, S. (2009). *Global Crisis Reporting: Journalism in the Global Age*. Maidenhead: Open University Press.

De Grauwe, P. (2010). Crisis in the Eurozone and how to deal with it. *CEPS Policy Briefs* 204, 1-5.

De Landtsheer, C. (2009). Collecting Political Meaning from the Count of Metaphor. In A. Musolff and J. Zinken (Eds.), *Metaphors and Discourses*. London: Routledge.

de Vreese, C.H. (2010). Framing the economy. In: P. D'Angelo & J.A. Kuypers (Eds.), *Doing news framing analysis: Empirical and theoretical perspectives* (pp.187-214). New York: Routledge.

de Vreese, C.H. & Boomgaarden, H.G. (2005). Projecting EU referendums: Fear of immigration and support for European integration. *European Union Politics* 6(1): 59-82.

Druckman, J.N. (2001). On the limits of framing effects: Who can frame? *Journal of Politics* 63, 1041-1066.

Druckman, J.N. (2004). Political preference formation: competition, deliberation, and the (ir)relevance of framing effects. *American Political Science Review* 98, 671-686.

Duch, R. (2007). *The Economic Vote: How Political and Economic Institutions Condition Election Results*. Cambridge: Cambridge University Press.

Entman, R.M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43: 51-8.

Esager, M. (2011). *Fire and Water - a comparative analysis of conceptual metaphors in English and Danish news articles about the credit crisis 2008*.
http://pure.au.dk/portal/files/40317984/Fire_and_Water.pdf

Galtung, J. & Ruge, M.H. (1965). The structure of foreign news. *Journal of Peace Research*, 2(1), 64-90.

Gamson, W.A. and Modigliani, A. (1989). Media discourse and public opinion on nuclear power. A constructionist approach. *American Journal of Sociology* 95(1), 1-37.

Higgings, E.T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E.T. Higgins & A.W. Kruglanski (Eds.), *Social Psychology: Handbook of basic principles* (pp.133-168). New York: Guilford Press.

Horner, J.R. (2011). Clogged systems and toxic assets. News metaphors, neoliberal ideology, and the United States 'Wall Street Bailout' of 2008". *Journal of Language and Politics*, 10(1), 29-49.

Igartua, J. & Cheng, L. (2009). Moderating effect of group cue while processing news on immigration: Is the framing effect a heuristic process? *Journal of Communication* 59, 726-749.

Iyengar, S. (1991). *Is anyone responsible? How television frames political issues*. Chicago: University of Chicago Press.

Kollmeyer, C.J. (2004). Corporate interests: How the media portray the economy. *Social Problems* 51(3), 432-452.

Lakoff, G. & Johnson, M. (1980). *Metaphors we live by*. Chicago, IL: University of Chicago Press.

Lecheler, S. & de Vreese, C.H. (2011). Getting real: the duration of framing effects. *Journal of Communication* 61, 959-983.

Lecheler, S. & de Vreese, C.H. (2012). News framing and public opinion: A mediation analysis of framing effects on political attitudes. *Journalism & Mass Communication Quarterly* 89(2), 185-204.

Lecheler, S., de Vreese, C.H. & Slothuus, R. (2009). Issue importance as a moderator of framing effects. *Communication Research* 36(3), 400-425.

Morton, T. & Duck, J. (2001). Communication and health beliefs. Mass and interpersonal influences on perceptions of risk to self and others. *Communication Research* 28(5), 602-626.

Nabi, R.L. (2003). Exploring the effects of emotion. *Communication Research* 30, 224-247.

Nelson, T.E., Clawson, R.A. & Oxley, Z.M. (1997). Media framing of a civil liberties conflict and its effect on tolerance. *American Political Science Review* 91, 567-583.

Nieminen, H. & Trappel, J. (2011). Media Serving Democracy. In: J. Trappel, W. Meier, L. d'Haenens, J. Steemers, B. Thomass (Eds.) *Media in Europe Today*. Bristol: Intellect.

Ortner, C. (2014). *Wie junge Erwachsene die EU sehen und was die Medien dazu beitragen. Zur Bedeutung medienvermittelter Erfahrungen für die Entwicklung von Orientierungen gegenüber der EU*. Baden-Baden: Nomos.

Ottati, V., Renstrom, R. & Price, E. (2014). The metaphorical framing model: political communication and public opinion. In: M.J. Landau, M.D. Robinson & B.P. Meier (Eds.), *The power of metaphor: Examining its influence on social life*. Washington, DC: American Psychological Association.

Papathanassopoulos, S. & Negrine, R. (2011). *European Media: Structures, Politics and Identity*. Cambridge: Polity.

Petty, R.E. & Cacioppo, J.T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York: Springer-Verlag.

Picard, R.G. (2015). Understanding the crisis. In: R.G. Picard (Ed.), *The Euro crisis in the media: Journalistic coverage of economic crisis and European institutions* (pp. 1-15). London: I.B. Tauris & co.

Radu, L. & Stefanita, O. (2012). Framing the Economic Crisis in the Romanian Online Media. *Romanian Journal of Communication and Public Relations* 14(2), 29-46.

Robins, S. & Mayer, R.E. (2000). The metaphor framing effect: Metaphorical reasoning about text-based dilemmas. *Discourse Processes* 30(1), 57-86.

Scheufele, D.A. & Tewksbury, D. (2007). Framing, agenda setting, and priming: The evolution of three media effects models, *Journal of Communication*, 57: 9-20.

Schudson, M. (2008). *Why Democracies Need An Unlovable Press*. Cambridge, UK: Polity Press.

Shen, F. & Edwards, H.H. (2005). Economic individualism, humanitarianism, and welfare reform: A value-based account of framing effects. *Journal of Communication* 55, 795-809.

Slothuus, R. (2008). More than weighting cognitive importance: a dual process model of issue framing effects. *Political Psychology* 29(1), 1-28.

Thibodeau, P.H. & Boroditsky, L. (2011). Metaphors We Think With: The Role of Metaphor in Reasoning. *PLoS ONE* 6(2): e16782. doi:10.1371/journal.pone.0016782.

Touri, M. & Rogers, S.L. (2013). Europe's Communication Deficit and the UK Press: Framing the Greek Financial Crisis. *Journal of Contemporary European Studies*, 21(2), 175-189.

Tzogopoulos, G. (2013). *The Greek Crisis in the Media: Stereotyping in the International Press*. Farnham: Ashgate Publishing.

Van den Noord, P. & Szekely, I. (2011). *Economic crisis in Europe: Causes, Consequences and Responses*. London: Routledge and European Commission.

Waheed, M., Schuck, A., Neijens, P. & de Vreese, C.H. (2015). The effects of news frames and political speech sources on political attitudes: The moderating role of values. *Communications* 40(2), 147-169.

Walsh, K.C. (2004). *Talking about politics: Informal groups and social identity in American life*. Chicago: University of Chicago Press.

Zaller, J. (1992). *The nature and origins of mass opinion*. Cambridge: Cambridge University Press.

Zografova, Y., Bakalova, D. & Mizova, B. (2012). Media reporting patterns in Europe: The cases of construction of the EU and Reform Treaty, *Javnost*, 19 (1): 67–84.